PROGRAM-RELATED FATALITIES

MICHIGAN 2016

Management Information Systems Section
Technical Services Division
Michigan Department of Licensing & Regulatory Affairs
August 2017

CONTENTS

CONTENTS (CONTINUED)

INTRODUCTION

In 2016, Michigan reported 43 Program-Related fatalities. Program-Related fatalities in Michigan are recorded and tabulated by the Management Information Systems Section (MISS), Michigan Occupational Safety and Health Administration (MIOSHA), Michigan Department of Licensing and Regulatory Affairs (LARA). The sources of data include the Basic Report of Injury – Form 100 and telephone reports of fatalities to MIOSHA. The conditions necessary for a fatal case to be Program-Related are defined in the NOTE ON PROGRAM-RELATED CASES (see Page 8).

The intention of this report is to promote an understanding of what constitutes a Program-Related fatality and to assist in the continued effort of preventing and reducing fatal cases. Information presented in this report may be of special interest to employers, employees, safety professionals and consultants. Any inquiries regarding this report may be addressed to:

Management Information Systems Section
Technical Services Division
Michigan Occupational Safety and Health Administration (MIOSHA)
Michigan Department of Licensing & Regulatory Affairs
530 W. Allegan Street, P. O. Box 30643
Lansing, Michigan 48909-8143
Telephone (517) 284-7790

HIGHLIGHTS OF PROGRAM-RELATED FATALITIES, MICHIGAN 2016

This Program-Related fatality information for Michigan was compiled from the "Employers Basic Report of Injury," Workers Disability Form 100s, and from direct telephone reports of fatalities to MIOSHA. Only fatal cases that are Program-Related, as defined by MIOSHA, are compiled. Therefore, the data does not include fatalities resulting from heart attacks, homicides, suicides, personal motor vehicle accidents, and aircraft accidents. The figures are shown in **Tables 1 through 7**.

PROGRAM-RELATED FATALITY TRENDS

A definition of Program-Related cases can be found on Page 7 of this report. Program-Related fatality trends for 1987 through 2016 are shown in **Table 1**, as well as data from 1989 through 2016 in **Chart 1**.

This report is an overview of how the fatalities were distributed across industry groups and occupations. Frequencies of fatalities by age group, gender, month of occurrence, and counties of occurrence are also provided.

PROGRAM-RELATED FATALITIES BY INDUSTRY

Table 2 shows the distribution of Program-Related fatalities by industry groups in 2016. This was determined by the job being performed by the employee at the time of the accident. Beginning in 2003, the industry group category is based on the Northern American Industry Classification System (NAICS), which groups establishments into industries based on the activities in which they are primarily engaged. Prior to 2003, the industry group category was based on the Standard Industrial Classification (SIC) of the employer. Due to the substantial differences between the current and previous classification systems, the results by industry in 2003 and thereafter constitute a break in series and users are advised against making comparisons between the 2003 industry categories and the results for previous years.

During 2016, the largest number of Program-Related fatalities were reported in the Construction industry (NAICS 23) with 18 fatalities. This was followed by Administrative and Support and Waste Management and Remediation Services (NAICS 56) with eight fatalities and Manufacturing (NAICS 31-33) with 6 fatalities.

PROGRAM-RELATED FATALITIES BY AGE AND GENDER

The distribution of Program-Related fatalities by age and gender are shown in **Tables 3 and 4**. The age groups of 36-40 and 61 and over each reported seven fatalities. The age group of 56-60 reported six fatalities and the age groups of 31-35, 46-50 and 51-55 reported five fatalities each. Of the 43 victims, 42 were male employees.

PROGRAM-RELATED FATALITIES BY MONTH OF OCCURRENCE

Fatality data categorized by the month of occurrence is shown in **Table 5**. The month of October recorded the highest number of program-related fatalities with 8. Seven fatalities were reported for the months of July and September, August reported 6 fatalities and the months of April and November each reported 4 fatalities.

PROGRAM-RELATED FATALITIES BY INDUSTRY GROUPS AND DAYS OF THE WEEK

Program-Related fatalities by industry groups and days of the week are shown in **Table 6**. The highest number of fatalities by day of the week shows Monday with 10, followed by Tuesday with 9, Friday with 8, and Wednesday and Thursday with 6 each.

PROGRAM-RELATED FATALITIES BY COUNTY OF OCCURRENCE

The distribution of fatality cases by counties shows that Program-Related fatalities were reported as occurring in 20 counties during 2016. Eight fatalities were reported in Oakland County, 6 in Wayne County, 4 in Macomb and 3 each in Berrien, Ottawa and Washtenaw. Sixty-three counties had no program-related fatalities. A complete distribution of fatality cases by county of occurrence is shown in **Table 7.**

Even though Michigan's 2016 total Program-Related fatality cases are far less than the thousands of cases reported nationwide, the consequences of these on-the-job deaths in terms of human suffering, lost workdays, decreased production, and increased compensation rates are too significant to be overlooked.

In order for Michigan to reduce the number of on-the-job fatality cases, it requires a conscious effort on the part of employers to recognize and comply with MIOSHA standards, develop and implement safe working procedures, and assure that employees observe and practice these procedures. The MIOSHA program offers onsite consultation, and consultation, education and training (CET) opportunities to employers and employees alike to help them achieve this goal.

Those Michigan employers, who would like to request education and training services, as well as onsite consultation programs, may contact:

Consultation Education and Training (CET) Division
Michigan Occupational Safety and Health Administration (MIOSHA)
Michigan Department of Licensing & Regulatory Affairs
530 W. Allegan Street, P. O. Box 30643, Lansing, Michigan 48909
Telephone (517) 284-7790

The Program-Related fatality data for Michigan are presented in the following series of **Tables 1 through 8**. A brief description of how the Program-Related fatalities occurred is also provided following the series of tables. The descriptions are listed by industry groups based on the North American Industry Classification System (NAICS), which is based on the activity in which the establishment is primarily engaged. Safety professionals may find this information useful for accident prevention.

NOTE ON PROGRAM-RELATED CASES

A fatality is recorded as "Program-Related" if the deceased party was employed in an occupation included in MIOSHA jurisdiction as defined in Public Act 154 of 1974, as amended, and the fatality appears to be related to one or more of the following conditions:

1. The incident was found to have resulted from violations of MIOSHA safety and health standards or the "general duty" clause.

2. The incident was considered to be the result of a failure to follow a good safety and health practice that would be the subject of a safety and health recommendation.

3. The information describing the incident is insufficient to make a clear distinction between a "Program-Related" and "non-Program-Related" incident, but the type and nature of the injury indicates that there is a high probability that the injury was the result of a failure to adhere to one or more MIOSHA standards, the "general duty" clause, or good safety and health practice.

Any inquiries may be addressed to:

Management Information Systems Section
Technical Services Division
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Michigan Department of Licensing & Regulatory Affairs
530 W. Allegan Street, P. O. Box 30643
Lansing, Michigan 48909-8143
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CHART 1
PROGRAM-RELATED FATALITY TRENDS, MICHIGAN 1989-2016

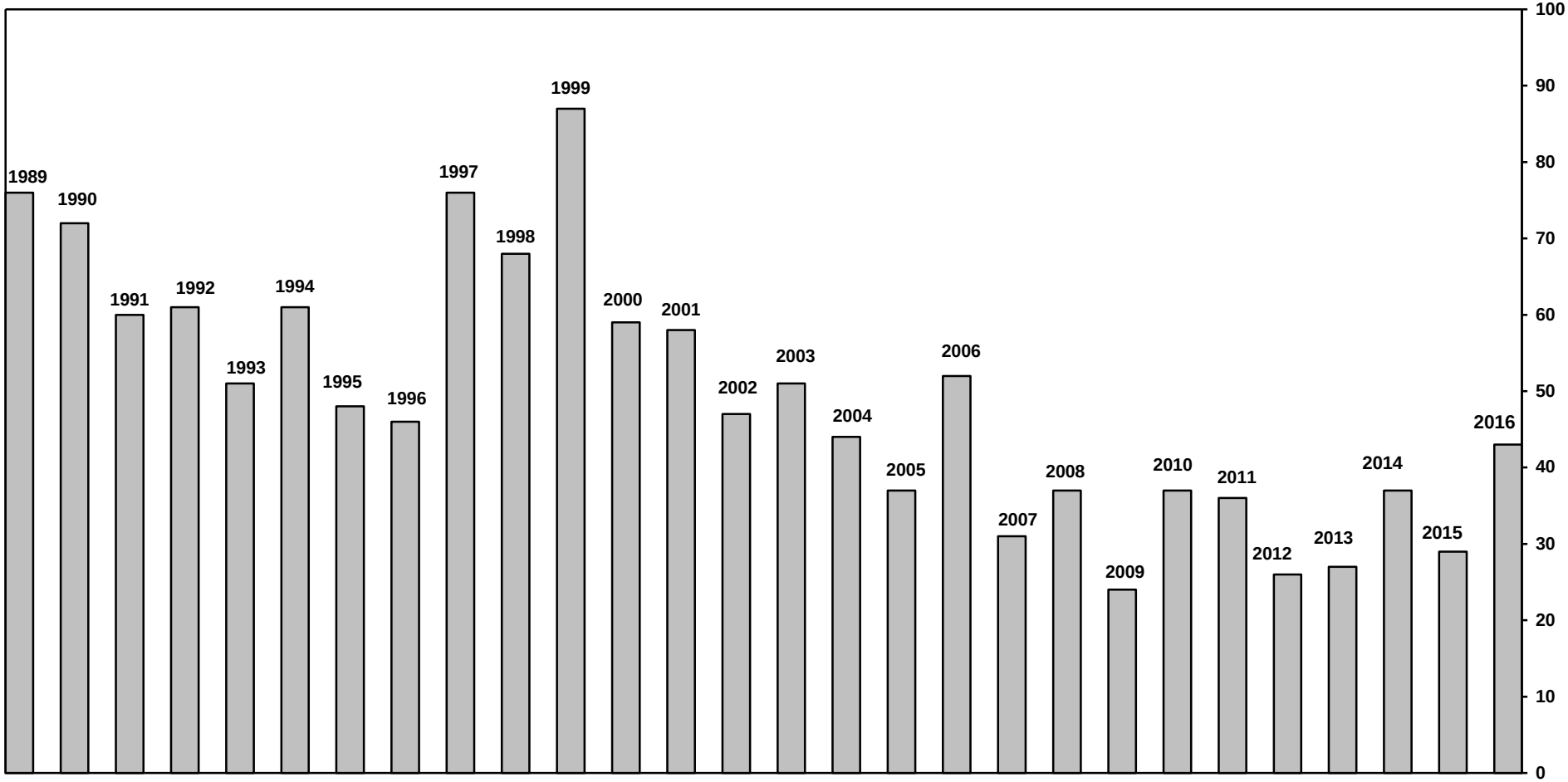

TABLE 1

PROGRAM-RELATED FATALITY TRENDS,
MICHIGAN 1987 – 2016

YEAR	NUMBER	PERCENT CHANGE FROM PREVIOUS YEAR	PERCENT CHANGE FROM 1987
1987	73	--	---
1988	64	-12.3	-12.3
1989	76	18.8	4.1
1990	72	-5.3	-1.4
1991	60	-16.7	-17.8
1992	61	1.7	-16.4
1993	51	-16.4	-30.1
1994	61	19.6	-16.4
1995	48	-21.3	-34.2
1996	46	-4.2	-37.0
1997	76	65.2	4.1
1998	68	-10.5	-6.8
1999	87	27.9	19.2
2000	59	-32.2	-19.2
2001	58	-1.7	-20.5
2002	47	-19.0	-35.6
2003	51	8.5	-30.1
2004	44	-13.7	-39.7
2005	37*	-15.9	-49.3
2006	52	40.5	-28.8
2007	31	-40.4	-57.5
2008	37	19.4	-49.3
2009	24	-35.1	-67.1
2010	38*	58.3	-47.9
2011	36	-5.3	-50.7
2012	26	-27.8	-64.4
2013	27	3.8	-63.0
2014	37	37.0	-49.3
2015	29	-21.6	-60.3
2016	43	48.3	-58.9

Source: MISS/TSD/ MIOSHA/Michigan Department of Licensing & Regulatory Affairs

Note: An amendment has been made to both the 2005 and 2010 fatality counts. They were previously reported as 36 and 37 total fatalities respectively.

TABLE 2

PROGRAM-RELATED FATALITIES BY INDUSTRY GROUPS, MICHIGAN 2016

NAICS MAJOR SECTOR	INDUSTRY GROUP	TOTAL
11	AGRICULTURE, FORESTRY, FISHING AND HUNTING	3
21	MINING	0
22	UTILITIES	0
23	CONSTRUCTION	18
31-33	MANUFACTURING	6
42	WHOLESALE TRADE	1
44-45	RETAIL TRADE	1
48-49	TRANSPORTATION AND WAREHOUSING	3
51	INFORMATION	0
52	FINANCE AND INSURANCE	0
53	REAL ESTATE AND RENTAL AND LEASING	2
54	PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES	0
55	MANAGEMENT OF COMPANIES AND ENTERPRISES	0
56	ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES	8
61	EDUCATIONAL SERVICES	0
62	HEALTH CARE AND SOCIAL ASSISTANCE	0
71	ARTS, ENTERTAINMENT AND RECREATION	1
72	ACCOMMODATION AND FOOD SERVICES	0
81	OTHER SERVICES (EXCEPT PUBLIC ADMINISTRATION)	0
92	PUBLIC ADMINISTRATION	0
TOTAL		**43**

Note: The industry group categories are based on the Northern American Industrial Classification System (NAICS), which is based on the activities in which the establishments are primarily engaged.

Source: MISS/TSD/ MIOSHA/Michigan Department of Licensing & Regulatory Affairs

TABLE 3

PROGRAM-RELATED FATALITIES BY AGE, MICHIGAN 2016

AGE	NUMBER OF CASES	PERCENT OF CASES
20 and Under	1	2
21 - 25	2	5
26 - 30	3	7
31 - 35	5	12
36 - 40	7	16
41 - 45	2	4
46 - 50	5	12
51 - 55	5	12
56 - 60	6	14
61 and Over	7	16
TOTAL	**43**	**100**

Source: MISS/TSD/MIOSHA/Michigan Department of Licensing & Regulatory Affairs

TABLE 4

PROGRAM-RELATED FATALITIES BY GENDER, MICHIGAN 2016

GENDER	NUMBER OF CASES	PERCENT OF CASES
MALE	42	98
FEMALE	1	2
TOTAL	**43**	**100**

Source: MISS/TSD/MIOSHA/Michigan Department of Licensing & Regulatory Affairs

TABLE 5

PROGRAM-RELATED FATALITIES BY MONTH OF OCCURRENCE, MICHIGAN 2016

MONTH OF OCCURRENCE	NUMBER OF CASES
JANUARY	0
FEBRUARY	2
MARCH	2
APRIL	4
MAY	1
JUNE	2
JULY	7
AUGUST	6
SEPTEMBER	7
OCTOBER	8
NOVEMBER	4
DECEMBER	0
TOTAL	**43**

Source: MISS/TSD/MIOSHA/Michigan Department of Licensing & Regulatory Affairs

TABLE 6

PROGRAM-RELATED FATALITIES
BY INDUSTRY GROUPS AND DAY OF THE WEEK,
MICHIGAN 2016

INDUSTRY GROUP	DAY OF THE WEEK							
	SUN	**MON**	**TUE**	**WED**	**THUR**	**FRI**	**SAT**	**TOTAL**
AGRICULTURE, FORESTRY, FISHING & HUNTING	0	0	0	0	2	1	0	**3**
CONSTRUCTION	0	3	5	3	2	4	1	**18**
MANUFACTURING	1	2	0	2	1	0	0	**6**
WHOLESALE TRADE	0	0	1	0	0	0	0	**1**
RETAIL TRADE	0	0	1	0	0	0	0	**1**
TRANSPORTATION & WAREHOUSING	0	1	1	0	0	0	1	**3**
REAL ESTATE & RENTAL & LEASING	0	0	1	0	0	1	0	**2**
ADMNISTRATIVE AND SUPPORT & WASTE MANAGEMENT & REMEDIATION SERVICES	0	4	0	1	1	2	0	**8**
ARTS, ENTERTAINMENT & RECREATION	0	0	0	0	0	0	1	**1**
TOTAL	**1**	**10**	**9**	**6**	**6**	**8**	**3**	**43**

Source: MISS/TSD/MIOSHA/Michigan Department of Licensing & Regulatory Affairs

TABLE 7
PROGRAM-RELATED FATALITIES BY COUNTY OF OCCURRENCE, MICHIGAN 2016

COUNTY	NUMBER OF CASES
ALLEGAN	1
BAY	1
BERRIEN	3
CALHOUN	1
CASS	1
CHARLEVOIX	1
CLINTON	1
IONIA	2
KALAMAZOO	2
KENT	1
LAPEER	1
MACOMB	4
OAKLAND	8
OCEANA	1
OTTAWA	3
PRESQUE ISLE	1
TUSCOLA	1
WASHTENAW	3
WAYNE	6
WEXFORD	1
TOTALS	**43**

Source: MISS/TSD/MIOSHA/Michigan Department of Licensing & Regulatory Affairs

PROGRAM-RELATED FATALITY INCIDENTS
BRIEF DESCRIPTIONS OF CASES BY INDUSTRY GROUPS

AGRICULTURE, FORESTRY, FISHING & HUNTING

1. An employee was attempting to repair a pump on a manure handling system. The pump was located in a 6’ x 6’ pit approximately 10' below grade. Employee entered the pit with no ventilation or testing. At some point, he lost consciousness and drowned in the liquid at the bottom of the pit.

2. Employee was lifting and moving a stack of nine wooden apple totes with a farm field tractor. The tractor had a set of forks and no overhead guard. The top three totes fell, which weighed approximately 160 pounds each, and struck the operator.

3. Employee was in a basket lifted to approximately 20' installing a screen over a vent pipe. The basket was lifted by a material handler. It was sitting on the forks and was not attached to the material handler. The forks were not in the fork tubes and there was not a chain secured to the mast. During work, the basket slipped, causing it to fall with the employee inside.

CONSTRUCTION

4. Employees were changing signage on the highway when a semi-truck crossed a white line and hit two employees. One sustained serious injuries and the other died as a result of being struck by the vehicle.

5. An operator of an excavator was clearing trees and brush from a drainage ditch to level and install a drain pipe when a tree fell onto the excavator cab. The operator sustained head injuries as a result and died.

6. An employee was completing a roofing job from a rough terrain scaffold that was being supported by a forklift when he fell.

7. Employee was installing siding at a residential construction site when he fell from the scaffold 13-feet to the pavement below.

8. While tearing off old roofing material on an industrial building, the employee fell through the roof to the concrete floor below.

9. An employee was roofing an apartment building. He climbed to the roof and collapsed. His death was determined to be heat-related.

10. While installing roof trusses, an employee fell through the second floor stair hole to the concrete basement floor 22-feet below. He died of head injuries.

11. Employee was welding a boat slip on a dock when he was electrocuted.

12. An employee fell while bracing a parapet wall.

13. Employee was cutting insulation board for roof, while next to the roof's edge. The worker fell 17-feet, 6-inches to the ground below.

14. While performing roofing operations on a residential property, the employee fell off the roof.

15. Two employees were installing a light fixture on the gable-end of a pole barn. Both employees fell 24-feet from ladders that were erected on top of a mobile welded frame scaffold that tipped over, falling away from the building. The mobile scaffold platform did not have a stable base, was not plumb, braced properly or secured to the building. One employee landed on concrete and died. The other one landed in the sand and shattered his elbow.

16. Employee was relocating rigging equipment above a hoist way for a future elevator installation when he moved the ladder and fell down the elevator shaft 22-feet to the concrete floor below.

17. While installing gutter on a residential home, an employee was found slumped over a running generator inside the company box truck. He died from electrical shock from improper grounding of the generator.

18. Employees erected a scaffold to install soffit and fascia. The scaffold collapsed when both employees stood on one end. The wood scaffold was constructed at 20-feet above grade. It was not designed or constructed by a qualified person or properly supported. The employees were not using any fall protection. One died as a result of the fall. The other employee received broken bones.

19. Employee contacted an overhead energized power line with a 29-foot long handle of bull float he was moving to a new area in preparation for smoothing concrete that was being poured.

20. Employee was operating an aerial lift, driving lift from one side where he had secured steam/water, to another location within the building where a newly installed pipe was leaking. He was operating the lift facing the controls with his back toward the direction of travel. While driving, his back struck an angle iron that was covered by a tarp and was 10 feet 8 inches above ground. He died from crush injuries to the chest from the angle iron and basket of aerial lift.

21. Employee was painting from an elevated motorized two-point suspension scaffold when one of the anchor points failed and he fell to the interior bowl floor of the water holding tank.

MANUFACTURING

22. A sanitation worker was cleaning and sanitizing the inside of an industrial food processing stainless steel mixing tank with cleaning agents and a long-handled brush. As he was cleaning, a co-worker started up the mixer. Employee was caught in the mixing blades of the mixer and died as a result of his injuries.

23. An employee went into a plastic injection molding machine to remove parts that had fallen from the overhead picker conveyor. The employee removed the parts but was still between the two molds. The pressure-sensing floor did not detect that the employee was still inside the machine and the control panel indicated that it was all clear to run the machine. The molding operator, unaware an employee was still inside the machine, closed the front gate and the mold closed, crushing the employee.

24. While inspecting parts that had come off the rotary device, the employee opened the gated area while the machine was in full operation. The machine rotated as he stepped up on the bottom platen to evaluate the molds. His head and neck were caught between the rotary device and part of the platen frame work when the system cycled, causing crushing injuries to his head and neck.

25. Employee was walking through a work area when he lost his balance and rolled his right ankle falling and tearing his Achilles tendon on his right foot. He later developed a blood clot and died as a result of it.

26. While unloading a "mini-dumpster" from the forks of a powered industrial truck into a trash compactor located in the facility parking lot, an employee placed himself between the front of the powered industrial truck and the compactor with the forks slightly elevated. It appears the parking brake was not functioning properly as the truck rolled forward, pinning the employee between the “mini-dumpster” and the compactor, crushing his abdomen.

27. Employee had stepped out of the lift basket onto a steel cross member to weld a broken beam on a Pick-n-Place conveyor. The employee's knees buckled and he fell to the floor below. He was not wearing fall protection.

WHOLESALE TRADE

28. The employee entered the molasses tank to reposition a drain pipe. He became unresponsive, passed out, and drowned in the molasses/water mixture.

RETAIL TRADE

29. An employee was moving a new 2016 Ford F-150 because it was behind a truck that had been sold. The employee pulled the truck to the right and forward and then opened the driver's side door. At that point, the truck rapidly moved in reverse, striking another truck behind it. The employee was thrown from the truck driver's seat and between the two trucks as they collided.

TRANSPORTATION & WAREHOUSING

30. Employee was standing on top of a tanker he was cleaning with a water hose when he took off his respirator and inhaled hydrogen sulfide. He fell from the top of the tanker to the ground below. He was not wearing fall protection. The cause of death was related to the hydrogen sulfide inhalation.

31. Employee was performing a pipeline visual inspection while standing on the head of the tie next to the Northern most rail when he was struck by a train.

32. While standing in a wooden apple crate that was elevated and unsecured from a powered industrial truck's forks, the employee fell approximately 15-feet to the surface below when the crate he was in tipped.

REAL ESTATE & RENTAL & LEASING

33. As she was sitting on a wooden bench located on the west side of the beach informing residents to leave the beach area, the employee was struck by lightning and died as a result of the lightning strike.

34. Employee was lifting a gravel shaker table from a trailer to the ground with a mobile crane. While doing so, the crane tipped over, crushing the cab and fatally injuring the employee.

ADMINISTRATIVE & SUPPORT & WASTE MANAGEMENT & REMEDIATION SERVICES

35. A tree trimmer was wearing a positioning-saddle fall arrest system. While ascending a rope that was placed in the crotch of a tree to gain elevation to the height where he could safely tie off to remove some dead limbs and cable two trees together for support. The employee was approximately 40-feet above the ground. As he was ascending, his fall harness positioning-saddle rope bridge broke. The employee fell approximately 20-feet and struck the edge of the house roof and then fell another approximately 20-feet to a wood deck below where he landed on his back.

36. Employee was trimming silver maple branches from a residential property using an articulating boom truck man bucket to lift and move cut branches over to chipping area. For unknown reasons, the bucket tipped and the employee fell approximately 15-feet onto the cement below.

37. The employee was performing line clearance tree trimming in a residential subdivision. By all indications, the knot used to attach his climbing rope to his climbing saddle came undone and he fell approximately 35-feet to the ground below.

38. Employee was grabbing for his life line that he had readjusted to the next crotch up on the tree when he lost his balance and fell approximately 35-feet to the ground.

39. Employee was standing in a bucket of a bucket truck sawing a limb off a tree about 55-feet above the ground. The limb was tied to the front of the bucket truck and around a tree crotch. The limb split, fell onto the bucket and dropped over the right side of the truck boom pulling down on the bucket and catapulting the employee from the bucket. The employee was not wearing fall protection.

40. And 41. **- Two Fatalities**
    Two employees were removing buoys while performing maintenance duties at the lake of a residential subdivision. They were working from an aluminum 10-foot Tracker boat. The boat began to take on water and sink so the employees called three other colleagues working in the area and advised them the boat was sinking. The two employees in the boat were in the water by the time their co-workers arrived on scene. Two other co-workers witnessed the event from the shore and entered the water in an attempt to rescue the employees in the sinking boat. The two employees swimming from shore submerged below the surface of the water prior to reaching the employees in the boat. One of the employees in the capsized boat managed to swim to shore on his own, while the other was rescued by a resident of the subdivision that had driven his boat to the scene to provide rescue. After an underwater search by members of the local county dive team, the employees were located in approximately 10-feet of water. They were submerged for approximately 60 minutes.

42. An employee was trimming trees and removing vines using a climbing rope with a saddle harness. His primary climbing rope was cut in half approximately 8-12 inches from his saddle harness by a handsaw as there were blue rope fibers found on the handsaw teeth. The employee fell 40-feet to the ground below and died from his injuries.

ARTS, ENTERTAINMENT & RECREATION

43. Employee appeared to be directing traffic near turn 2 on the racetrack while under a caution during the race. While the single-file cars were making the turn, one jumped out of line and struck the employee.